

UNIVERSAL DIGITIZED—AUDIO INTERCHANGE

COMPUTER SHOPPER[®]

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THE WORLD'S BIGGEST
COMPUTER MAGAZINE

AT&T

6386 WGS

The
Right Choice
For **UNIX**

IBM PS/2
ONE YEAR LATER



**BUILD YOUR OWN
AMIGA HARD DISK**



COMPUTER SHOPPER®

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AT&T 6386 WGS

The Right Choice For UNIX

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ATARI ST

Atari ST News And Comment

by John Nagy

Here's more Atari ST news and rumors gleaned from press releases, club newsletters, backroom chatter, and personal interviews with the people that should know.

Now with the official product lineup including two game consoles, three different 8-bit computers, 68000 series computers in half- one- two- and four-meg sizes, 8086 PC and XT clones, an AT clone, a 386 clone, and the 32-bit Transputer, Atari has perhaps the widest line of computers in the world! Now if we are ever offered a chance to buy them, who knows what might happen to this amazing company?

Walt Wilson, formerly of Apple, was briefly in charge of building the Atari dealer network that has been so desperately needed for so long... and has already left the company. After

discussing how Atari had been "shooting itself in the foot," he was overheard as early as September at the "Magic AtariFest" in Detroit, Michigan, saying "You don't realize how frustrating it is to work for Jack Tramiel." It apparently got too much for Mr. Wilson.

"BIG SPLASH" advertising never made it to much of the country, despite millions supposedly spent by Atari to hawk the 8-bit and ST computer lines this winter. According to Neil Harris, top product information man at Atari, the advertising was limited to regions where dealer penetration of the products was sufficient. That means, if Atari is hard to find in your area, they didn't advertise there. It seems to make economic sense, but as long as Atari only advertises where people already can buy the machines, the areas where they can't be found will never hear of Atari again. Let's hope Atari will do something to

break the circle of "No dealer, so no advertising, so no demand, so no dealer..." More markets are promised.

Wondering where your *Analog* or *ST-LOG* magazines have gone? Both exclusive Atari interest magazines have been out of circulation since the September 1987 issues. Reports are that the company that produced the two publications has been bought by Larry Flynt (notable for his "adult" publications...), and the magazines will resume, virtually unchanged, starting perhaps by the time you are reading this. Subscribers are encouraged to hang on, they will get their full contract number of issues. Writers and contributors are also waiting...to be paid. Darek Mihocka, author of the "ST Transformer" 8-bit emulator for the ST, is one of them. Part one of the article on the emulator ran in the last *ST-LOG*, and six to nine months later, part

two should see print, and eventually be paid for. Darek tells us he isn't worried.

The other word from Darek Mihocka is that a new version of his ST-Transformer will be out this spring, and it will be 50-75% faster than the "old slow" one. You read a lot about the 8-bit Atari emulation program here in *Computer Shopper* last year, and the publicity gained here helped urge Atari to allow the use of their copyrighted operating system and BASIC code for use in the public domain emulator. This time the Transformer will include player missile graphics (Darek expects!) and might include an R: handler for modem use. Darek tells me he has pared the formerly 88 clock-cycles overhead per instruction lookup (done every time

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Atari ST Outlook

by D. F. Scott

The Spark Of The Idea

There are artists—writers, creators—who are necessarily impractical people. Their time is completely unregulated by anyone or anything outside their own head. They eat and sleep generally when it's convenient and when their train of thought is uninterrupted. Most of the time the things creators do make no immediate sense at all. Yet they don't feel guilty nor ashamed of how they use their time, their hands, or their minds.

In this society, however, the creator has to make a living—to at least subsist. In order to do this, he must find a use, a purpose, a "commercial application" for his work. America is currently a nation based upon gross national product; although it is rooted within the idea of freedom, its foremost restriction is that what we are free to do must somehow become profitable. The foremost dilemma facing the creative individual is the question of how to resolve the fundamental and often diametrical differences between a substantial creation and an applicable production.

The Atari ABAQ is the culmination of the dreams and concepts of artists, scientists, and technicians from different countries. It is the product of a collected gathering of small engineering groups, normally tucked away in untouchable silicon think tanks—the minority leaders and minority whips of a party of representatives of liberal nonstandardizationists, subscribers to the doctrine

that where there is standardization, there is also mediocrity. Their brainchild will operate more like a brain than any mass-market microcomputer built before it. Its internal processing algorithms will actually be capable of splitting tasks into hierarchical subtasks, determining through a system of priorities how best a task is performed for the time and circumstance in which it is to be performed.

When the product was first announced, not even Atari itself could explain the full definition of a "Transputer" or "parallel processing"—this was one instance in which the manufacturers scooped the P.R. agents. As a result, much of the more audible public response through services such as Delphi consisted of bewilderment, which later became confusion. Then, after the misinformation was swept aside by Perihelion, Ltd.—the British firm which has partnered with Atari in the design of the hardware—the majority response appeared as if the Atari enthusiasts were being offended by a bad joke.

In addressing the engineering workstation market, says this view, Atari is ignoring those individuals in the home and small business markets which comprise Atari's "bread-and-butter"—the game-player, the personal accountant, the experimenter. It is as if we were to rebuke the space program for having abandoned the common commercial aircraft passenger. In the meantime, while ST owners are worried that Atari is becoming too serious, the world workstation market is observing this relatively small gathering of

engineers to see if Atari is serious enough.

Yet there is still the workstation user to be spoken for. While we're debating the issue of "serious," she is seriously debating the issue of surrender. It seems we are often unsure of to whom this or any other original concept belongs whether it is withheld from us or handed to us on a silver platter. To shed some further light on this debate, let us look elsewhere to one of the technological incubators of, among other concepts, parallel processing—as well as one of more global importance:

Interactive Telecommunications

There is a project under way at the Media Lab of the Massachusetts Institute of Technology to study the potential benefits of putting a computer inside a television set and making it, essentially, interactive. For instance, a data service could have all the news waiting for me, and I could download those articles which relate to my user profile. My profile could tell the news service to put technological news up front, and to leave in the juicy details. It could also tell the service to put news about TV evangelists in little blurbs on the "back page." I could then runoff the news on my printer—a laser printer, if we look far enough ahead, when text may be sent in packaged segments rather than ASCII's sequential streams.

The MIT Media Lab has been working on this project for a few years now, though its story has been carried primarily in little blurbs on back pages of the unread portion of newspapers or in books tucked away in far-off

bookstores, until one night on NBC Nightly News when Fred Briggs was thoughtful enough to interview the Media Lab's director, Nicholas Negroponte. He fits the mold of the creator precisely: completely impractical, self-regulated, speaking as if aloft in one of Jules Verne's balloons.

Negroponte's attitude inspired me to meld some of his ideas about interactive telecommunications with mine. If there are two things I may be addicted to in life, they are Dr. Pepper and the news. Often in my household whenever the US decides to bomb somebody for no reason at all, the crackle and sputter of my shortwave radio can be heard throughout. My personal ethic states freedom to choose is completely useless unless we are fully informed to make a choice at all.

So with visions of news terminals dancing in my head, I gleefully began preaching the gospel of information. I spoke of two-way informational conferences between people of importance and the general public, of debates in which the public at home could voice a response, of newscasts several hours long trimmed to size by the computer on the viewing end, and storable in a form of data "morgue" for use in future research.

I went on-line to a Delphi conference node with these concepts, and was met with a rather thundering indifference. Perhaps this was because the subject had nothing to do with Atari or blitter chips or bus expansions. Usually I'm good at generating interest in a subject;

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Hacking The ST

by Wynn Rostek

This month I'll be going over the file buffer routines we will use in our communications program, and presenting a little more background on telecommunications (and computing in general).

Several terminal packages out there for the ST (and other machines as well) don't even use buffer routines. You might wonder why we bother with buffering. You can easily write a program without, saving yourself quite a bit of

work. Although there are several reasons to go to the extra trouble of buffering in communications programs, the main advantage is speed.

With the high cost of connect time, (and long distance tolls) one thing a terminal package should do is transfer the data as fast as practical. With commercial services and long distance rates, time is money!

Even for local calls to public BBSs, saving time still makes sense. A quick program decreases the time it takes to do whatever you need to, allowing more users to access the BBS. (Actually for most users it really means you can download more programs before your time expires and the BBS hangs up on you.)

With the speed advantage of buffering, you might expect all terminal packages to make extensive use of buffering, but there are many programs out there still running unbuffered. These programs are easy to spot. If your terminal program keeps the floppy drive

access light lit the whole time you're doing a 9600 baud transfer, chances are good that it is not using buffers.

At 9600 baud, the programs are transferring about 1000 characters per second. This is far slower than the transfer time of all but the slowest disk drives. A standard 5 1/4 inch drive can transfer data at about 25K characters a second, far quicker than the terminal package.

Since the drive can transfer data so much quicker than the program, what's the harm of not buffering? If the drive can move 25K characters a second, and we are receiving about 1000 characters a second, it takes the drive only a tiny fraction of the receive time to transfer the data to disk. On the surface not buffering seems 'armless enough.'

The problem is that the time it takes to record the data on the disk is not the transfer time alone. Before the data can be transferred to the disk, the proper sector has to rotate under the head. On most 5 1/4 floppy drives it takes about

1/5 of a second for the floppy disk to complete one rotation. For any given write command, the time the proper sector takes to pass under the head can vary between 0 seconds and the time to make a complete rotation.

On the average, it takes 1/2 rotation to get the proper sector under the head, and so for most drives it takes an average of a tenth of a second to get the sector lined up. This time is more formally called the rotational latency of the drive.

Another factor entering into the picture is that the head may not be over the proper track, this means you have to issue step commands to the head to move it to the proper track. It takes a certain amount of time for the head to step a track, and it takes a little time for the head motion to die down after the movement.

To complicate matters even more, Some (most) systems spin the disk drive

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```
/* simple file variables */
struct c_fbf
{
    char *nxt;
    long left;
    int hand;
    int mt;
    int flow;
    char bff[16384];
};
```

Listing 1
Custom file buffer structures.

Listing 2

```
#include <stdio.h>
#include <osbind.h>
#include <bios.h>
#include <xbios.h>
#include "ssb.h"

/* File support functions and structures appear below */

/* some functions defined here */
long shutf();
void cputc();
char getfc();
void filcbf();
void mt_bf();

/* File I/O for our terminal package is based on a custom File buffer
structure. There are three of these structures used by the program. The
1st is used only for text capture. The second is used for file
transmission (ascii and XMODEM) and for file reception. The third buffer
is used for background printing. (print spooling) The capture buffer is
separate to keep it easy to toggle in and out of capture. All the
structures are identical. They contain a pointer to the next buffer
position, a count of the free bytes (or characters remaining) in the
buffer, the 16K buffer itself, a system file handle, an EOF flag, and a
flow control flag. It is the responsibility of the program to keep track
of buffer contents, read or write status and flush and fill operations. */

/* the custom file buffers */
struct c_fbf buf1, buf2, buf4, *cap, *wrk, *prt;

/* here are the routines that use the structure */

long shutf(buf)
struct c_fbf *buf;

/* this function returns 0 if the file was closed successfully */
/* if we couldn't close the file, we return an error code */
{
    return(Fclose(buf->hand));
}

void cputc(buf, c)
struct c_fbf *buf;

int c;

/* this function inserts a character into the write buffer. */
/* it is used with both buffer1 and buffer2. */
{
    char *ptr;
    char ch;

    if (buf->left == 0) mt_bf(buf); /* if no room left, Flush */

    ptr = buf->nxt; /* where does it go? */
    ch = (char) c; /* store the character */
    *ptr = ch; /* update pointer to next */
    buf->nxt++; /* one less slot left */
    buf->left--;
}
```

```
char getfc(buf)
struct c_fbf *buf;

/* this gets a character from a read buffer */
{
    char c;
    char *ptr;

    if (buf->left == 0) filcbf(buf); /* if its empty, fill it up */

    ptr = buf->nxt; /* which one is next */
    c = *ptr; /* get a character */
    buf->nxt++; /* update the pointer */
    buf->left--; /* one less char in the buffer */
    return(c); /* return the character */
}

void filcbf(buf)
struct c_fbf *buf;

/* this function fills the read buffer when called. if you */
/* can't fill the buffer, we get as much as we can. */
{
    long num; /* how many we really read */

    num = Fread(buf->hand, 16384L, buf->bff); /* try to fill the buffer */

    if (num < 1) /* if we didn't get anything */
    {
        buf->left = 0; /* nothing left in buffer */
        buf->mt = TRUE; /* set EOF */
        buf->bff[0] = 0x1a; /* set char to EOF */
    }
    else buf->left = num; /* so many char left */

    buf->nxt = buf->bff; /* point to start of buff */

    if (num < 0) message("A File read error occurred.");
}

void mt_bf(buf)
struct c_fbf *buf;

/* this function flushes the contents of an i/o buffer to disk. */
/* if we are in text capture and we're flushing the capture */
/* buffer, then we send the XON and XOFF characters. */
/* note that this is a modified version just for sideband usage. */
/* (because we kill the 68901 receive interrupt) */
{
    long num; /* how many characters we really wrote */
    long size; /* how many we want to write */
    extern struct c_fbf *cap; /* pointer to 16K buffer */

    size = 16384 - buf->left; /* find out how many characters in buffer */

    if (size > 0) /* if the buffer isn't empty */
    {
        if (buf->flow) Bconout(1, 0x13); /* if capture buffer, send XOFF */
        num = Fwrite(buf->hand, size, buf->bff); /* Flush it */
        if (num != size) message("Disk write error occurred.");
        if (buf->flow) Bconout(1, 0x11); /* if capture buffer, send XON */
    }

    buf->left = 16384; /* room for 16K characters in buffer now */
    buf->nxt = buf->bff; /* point to start of buffer */
}
```


ATARI

Applying The Atari

by Jeff Brenner

Atari's recent announcement that it has decided to stop the production of the ST machines in favor of a reintroduction of the 8-bit line hasn't surprised many in the industry. The plan is to convert existing ST inventory into new ST Game Systems and to convert the current XE Game Systems in inventory into electric typewriters and compact disc players. The highlight of the new 8-bit line will be the remake of the wonderful Atari 800. While internally, the new Atari 800s will be almost identical to the original 800 machines (except for the addition of 35 MIDI ports), the plastic housing will not be the same since the original molds were allegedly bent up by a disgruntled employee of the old Atari corp. Instead, in a cost-saving move, Jack Tramiel has decided to use the VIC-20 molds that he found "lying around in the attic." A 4 megabyte expander/adaptor will allow the new 800 to run all ST software, as well as IBM, Macintosh, Amiga and all TRS-80 Pocket computer software. In addition to dropping the ST line, Atari also cancelled its plans to mass market a Macintosh clone (the "Mac Tramiel") with the sales slogan "price without the power."

Yes, it's the April Fool's column again, and while Atari isn't really remaking the Atari 800, it has assured the 8-bit community that it will continue to support the 800/XL/XE line. This stuff is real, folks. In a letter to *ZMagazine*, issue #77, Atari's Neil Harris explained how Atari still has interest in the 8-bits and how the release of the Atari XE Game System would prove to be beneficial to 8-bit Atari owners. Following are some excerpts from Neil's interesting letter:

"...Atari U.S. has a substantial supply of 8-bit computers in stock. Very substantial. We have every motivation to sell 8-bit computers. At times we've been accused of trying to kill the line. Why would we want to? Because many of us came from Commodore, where we competed fiercely with Atari? Most of us had substantial respect for the Atari computers as competitors (as opposed to, say, Texas Instruments and Radio Shack)."

"...when we showed the XE Game System to the buyers, they were totally enthusiastic... We have something like 50 cartridges in inventory from the old days and are feverishly working on converting disk games to cartridge. With some clever programming, we can now get 256K of ROM on a cartridge, instead of the 16K in the old games. That's how we got Flight Simulator II plus a scenery disk onto a single cartridge. There is nothing different about the XE Game System to make this work—existing 8-bit computer owners can use the very same cartridges.

"So what does this mean to you? In

the beginning, all it will mean is that more games will be coming in 8-bit Atari format. But, what we hope is that this will be the springboard to revitalizing the 8-bit Atari computer line. Once the XE Game Systems start selling (and they have just begun arriving in stores this past week), we have a potential market of hundreds of thousands of consumers. At this time, Commodore is selling around 300,000 C64s annually. With a market this size, the motivation for software developers to bring out new titles in our format is enormous.

"Remember, the XE Game System is totally compatible with your 8-bit computers. Once the customer takes the XE Game System home, he discovers in the manual that the system includes the Atari BASIC language and that there is an SIO port for computer peripherals. We expect that people who may have been frightened of computers, or leary of spending the money on a computer with a drive (over \$400) may very well upgrade to a fuller system. And we hope that they will then demand the kind of software that we need to see developed—serious applications software."

Neil denies the reports that Atari is removing the motherboards from the 65XE inventory for use in manufacturing XE Game Systems. "It's a different board," he says. In addition, Neil states that Jack Tramiel plans to stock the Federated stores (in California, Texas, Arizona and Kansas) with a full line of 8-bit Atari.

Judging by the increase in 8-bit software releases in recent months and Atari's position as defined by Neil Harris, I think we are witnessing an 8-bit turnaround of significant magnitude. Let's hope the XE Game Machine is as successful as it promises to be.

Reader Mail

Dear Jeff:

Thank you for helping keep the Atari 8-bits going, with your column. We at Innovative Concepts specialize in products for the Atari 8-bit computers. At present, we are a small company, building all of our products by hand. We have a lot of "neat" little products, which we would appreciate any of them being mentioned in the column. Most noteworthy is the Easy Scan (yes, an image scanner for the 8-bits) and the ICX-85 keypad.

I have seen in your column several times handlers for the CX-85 as you seem to concentrate on applicational use of the Atari. For absolute convenience, we developed the ICX-85 (and Deluxe ICX-85) keypads, which do not require handler and work with all software.

Mark Elliott
Innovative Concepts
Warren, Michigan

I'm happy to lend you the column space and am always glad to hear from small firms devoted to supporting the 8-bit Atari. It is these companies, such as yours, that will be keeping the 8-bit machines alive and happy for a long time to come. Following is a description of some of Innovative Concept's interesting products:

The ICX-85 keypad is the answer to software incompatibility with a keypad handler. The keypad is wired directly into the keyboard, so that pressing a key on the keypad has the same effect as pressing the key on the keyboard with

any software. Installation consists of soldering a 12 wire connector into the computer and plugging the keypad into the connector, so you might want to have a friend help you out if you're not handy with the soldering iron. The price is \$44.95. The company offers a \$10 discount when a CX-85 is sent in as a trade-in towards the ICX-85.

The RAMdrive + XE-GM1 is a \$34.95 memory upgrade that allows owners of the new Atari Game System to expand the internal memory to 128K

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TANDY

The CoCo Column continued from page 206

puter users was the VIP Series. Many early CoCo-ists still swear to this day that VIP Writer is the best word processor available. The company that developed the VIP Series, Softlaw, recently sold the rights to the series of programs to SD Enterprises (P.O. Box 1233, Gresham, Oregon 97030).

The company still makes the VIP series available for sale, but has also improved one of the backbone programs of the series "VIP WRITER." This new version called "VIP Writer III" takes advantage of the many new features of the Color Computer 3.

Operating in the same respect as its predecessor, command-wise, it also includes commands for setting your screen width to 32, 40, 64, and 80 column screens, changing foreground or background colors, toggling between a color or monochrome monitor, and changing the configuration of the printer designation. Six commands used with the previous version of the program do not work with VIP Writer III.

VIP Writer III has a buffer area of 49,000 bytes. Considering the availability of more memory with the Color Computer 3, you may have thought the new version would make that extra memory available to itself. To some users of VIP Writer, this may be a let down, but the extra memory is used for a print spooler. This print spooler is a very useful tool when printing out multipaged documents, as you can send the file to a printer and continue working. Although the extra memory might have come in handy, I kind of like the idea of having a print spooler for use at my discretion.

If you are looking for a good RS-DOS word processor, one that has new life from a new company and a software title with a good reputation, then VIP Writer III should seriously be considered.

The Tandy Corporation released a new game called "Sub Battle Simulator." From the creators of "Koronis Rift" and "Rescue on Fractalus," EPYX does not let us down in the quality of these games for the CoCo 3 using the OS9 Level Two operating system.

As skipper of the submarine, you have the choice of Target Practice, a Single Mission in a real combat setting, or Wartime Command. When you choose the Wartime option, you'll be able to choose among 24 American or

36 German missions based upon available historical information from actual World War 2 battles. These missions will fall into one of four categories of Seek and Destroy, Rendezvous, Lifeguarding, and Patrol.

You'll have a handle on the condition of the submarine, weapons, and navigational aides to help guide you through the waters and take on adversaries. A choice of three maps, binocular and periscope views, radar and sonar screens, and status report are graphically displayed on screen.

If you enjoy the quality of previous EPYX games, then you'll have to save a space on your game shelf for "Sub Battle Simulator" (catalog no. 26-3272).

A CoCo Poll

Every once in a while, we like to get a feel of what CoCo users are thinking, what are common equipment setups, and what you'd like to read about. In the next month, when you have an available moment, we'd appreciate hearing from you and answering the following questions to this reader poll.

Question 1. What is your system setup? (Type of computer, monitor, and the type of peripherals you have hooked up to your CoCo.)

Question 2. What is your favorite program, and which operating system (RS-DOS, OS9, Flex, etc.) does it run under?

Question 3. If you could have any program made just especially for you what would it be or do?

Question 4. What kind of article(s) would you enjoy reading about in the CoCo Column of the *Computer Shopper*?

Once you have a chance to jot your answers to these questions down, mail it to: CoCo POLL, P.O. Box 891, Raleigh, N.C. 27602. Although this is not a scientific poll, we'll take a look at the results of this poll in the months to come, and your participation is greatly appreciated.

Coming next month in the CoCo Column, we continue to look inside the Color Computer, and a review of Home Publisher. The CoCo 3's answer to desktop publishing. Your comments and suggestions are always welcome, by writing to The CoCo Column, *Computer Shopper Magazine*, P. O. Box F, Titusville, Fla. 32781.

ATARI

Do It Yourself Atari Keyboard Repair

by John Nagy

Atari's 8 bit computers—the 400, 800, 600XL, 800XL, 1200XL, 65XE and 130XE—have one of the best service records in the computer industry. When Commodore was shipping 30% Dead On Arrival, we Atarians were nearly always greeted with a "READY" every time we opened the computer box. Time and experience has shown the machines to hold up well under heavy use.

One single area comes up time and again as the weak point on our Atari 8 bit computer: the Keyboard. While nearly all of the original 800s (the Beige Tank) are still working flawlessly, the XL series came out, the retail prices was a QUARTER of the introductory 800 price, and part of the savings came from

a much cheaper keyboard. It still wasn't bad. Then came the XE series, priced at under a Quarter of the original XL prices, and again, the keyboard was again cheapened drastically.

Here are a number of solutions that have been used with great success by owners around the country. Some are gleaned by my own experience inside of too many keyboards, and others come by way of User Group newsletters. Aside: If you aren't in a local user group, you are missing too much! If there isn't a group near you, join a regionally close by club to get their newsletter. You can't lose by staying in touch!

The 400, 800

GENERAL: These machines will probably never stop working. (The 400

"membrane" keyboard is hideous to type on, and was widely replaced by aftermarket keyboards, too varied in nature to try to discuss here.) The keyboard on the 800 is full typewriter quality, and seldom needs attention. When they do, it is often very difficult to repair due to the many moving parts inside each key. Sometimes the keys will stick—probably due to too many cokes and peanut butter. Since the unit is very well built and has no thin-film connectors, it is safe to nearly drench this machine in "tuner cleaner" spray to get the glop out. Use No-Residue cleaner at first, then follow it with a low-lubrication spray. I have had the nastiest feeling keys return to a silky smooth touch after a session of this.

If you actually break a key (almost the only other common failure), you have little choice but an entire keyboard transplant. Check around, a dead 800 isn't too hard to find for parts and the replacement is straightforward...even though opening the 800 is quite an experience! Replacement 800 keyboards are generally not available new and would be prohibitively expensive.

General: A fairly stable keyboard, although there are actually at least 3

distinctly different keysets used throughout production, and yours may not exactly match the description here. Some are very nice (the one on the 1200XL is legendary) and will never need work. Others are not so lucky. These keyboards do incorporate printed-film conductors that can be damaged by some cleaners and rough handling, so beware.

The Atari XL keyboard and console keys are attached to the top of the case. To get at it, remove the screws from the bottom of the case (don't lose too many when turning it over!) and lift the top away. It remains tethered with a ribbon connector and sometimes a grounding wire. Leave the ribbon connected until it is necessary to remove it. It is simply pressed into a socket on the motherboard, and will deteriorate every time you pull it out.

Problem: One key repeats uncontrollably. This is the most common flaw, and can be thermally dependent, happening only when cold or only after use. The repair is simple after examination of the internals of the keyboard. Pull the ribbon and get the keyboard

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TIMEX/SINCLAIR

Sinclair Survival Column continued from page 205

what order they arise and what chance events occur in between. The various decisions and outcomes are then drawn out in a symbolic form—the Decision Tree.

Payoffs—Work out the costs and values of all the events involved.

Probabilities—Estimate the likelihood of each of the chance events occurring.

Roll-Back—Use the decision tree analysis rules to calculate the solution. This is the key step in the process.

Risk Analysis—Check out the calculated solution to ensure that all possible outcomes can be tolerated.

Sensitivity Analysis—Find out how much your assumptions have to be changed to change the solution.

Before you attempt to make a decision with this package, it is strongly recommended that you take the time to go through the tutorial contained on the two Teaching cartridges. The example presented will guide you through the decision making process involved in buying a new car. In this situation you have decided to buy a car and have two choices. The first costs \$1000.00 at your local garage and comes with a full guarantee. The second only costs \$600.00 but any repairs will be your responsibility. By following through the tutorial you will get to see how QL Decision Maker analyzes the situation.

The initial decision to purchase the guaranteed car comes with the assumption that there will be no more to worry about, so the initial decision has no other branching decisions which follow. The initial decision to purchase the less expensive car involves more considerations than just the initial option to buy the car. It may be okay, but it may break down. If it breaks down this is

your problem and would necessitate another decision. If it doesn't break down there would be no more to worry about so that branch would end right there. If, however, it does indeed break down you have two choices—getting it repaired or selling it. If you choose to repair it you face two possibilities—the repairs might be cheap or costly. We can now assume that if we get the car repaired it will be fine from then onward, and if we decide to sell it we can replace it with the \$1000.00 car we originally had the opportunity to purchase in the first place. With this situation we can end all remaining branches of our decision tree.

While we were examining the possibilities, by following the directions presented by the computer we were drawing a diagram with lines showing the decision paths. Decisions will be represented by squares with lines continuing to either a bar—which represents the end of a branch, or a circle—which symbolizes a decision to be made. Once completed, this is the Decision Tree of which we spoke earlier.

For many decisions drawing this decision tree will help in making a decision in and of itself. However, to reach a reasoned decision we must find a way to determine which decision would result in the cheapest solution. This is what the program will do next.

The decision tree which you just created shows that there are six possible outcomes which may result.

- 1) You buy the guaranteed car and there is no more to worry about, or
- 2) You buy the cheap car which turns out to go well and there is no more to worry about, or

3) You buy the cheap car and it breaks down. You repair it and it costs a lot of money, or

4) You buy the cheap car and it breaks down. You repair it and it does not cost a lot of money, or

5) The cheap car breaks down and you sell it for a profit, putting the money towards buying the guaranteed car, or

6) The cheap car breaks down, you sell it at a loss and wind up buying the guaranteed car.

You then would examine how much money is involved in each situation.

Buying the guaranteed car—\$1000

Buying the cheap car—\$600

Expensive car repair costs—\$1000

Inexpensive car repair costs—\$300

High resale price of the car—\$800

Low resale price of car—\$400

As you can see, many of the values assigned to the situations listed above have to be approximations since we truly do not have a way of knowing in advance exactly the values. Therefore, approximations must be determined. We can now figure out how much each branch of our decision tree will cost us. For example, we find that the expensive repair branch will cost \$600 for the car plus \$1000 for the repairs for a total of \$1600. The branch in which you sell the car for a high resale price would cost you \$600 for the initial purchase of the car plus an income of \$800 from the sale of the car (net profit at this point is \$200) and finally a cost of \$1000 for the guaranteed car coming to a final cost of \$800. All of the other branches must be calculated in this manner.

Of course, not all of these branches have the same probability of occurring, so you next make some approximation of the probability percentage of each branch taking place. Once this is done the computer will now calculate each of the branches and display them in order with the most costly towards the top of the tree and the least costly at

the bottom. By following through we find that the least costly decision is the one in which we buy the cheap car and sell it again if it breaks down. (Is that what you originally expected? Come on now—the truth!)

If you have an Epson FX or RX or compatible printer attached to your QL you can make hard copies of your information in a variety of formats. You have the option of either printing out the entire tree or you can specify a window of information to be printed in a detailed manner. You may, of course, save for later use a tree which you have created. This program can recognize a variety of mass storage devices including your microdrives or floppy disks if you have such in your system.

As with all the software that Sinclair Research released shortly after the QL appeared, the documentation is quite substantive and not only shows you how to use the program (in a lot more complex situations than the example presented here), but tells you how the program works by discussing the theory behind the application as well. The more than 80 pages in the manual do an admirable job in acquainting you with the program and the process of Decision Analysis. The teaching program cartridges are a rather painless way of seeing the program in action, bit by bit, breaking the process down into small parts which take the mystery out of the procedure.

Once again I remind you that we are now getting to know a number of you who have joined us on the C*SIX SIG on Delphi where you can get together with your fellow Sinclair enthusiasts and me to discuss all of the current happenings in the world of Sinclair (as well as all other aspects of) computing. Come stop by and perhaps take part in one of our live conferences and who knows what well-known person might stop by to chat?

More Timex/Sinclair
on page 367

COMMODORE

Getting The Most From Your C-128

by Patrick A. Tillery

Last July I wrote a detailed review of Sylvia Porter's Personal Finance Series (SPPF) for the C-128. I like the program and said so. But I did point out a few short-comings hoping that Timeworks would take the hint. They did, plus they added a few more goodies. I just received my copy of the latest version and it is good! The first thing you notice are subtle differences in the screen. The screen is the same, but the font is slightly different. I wonder why they went to the trouble?

The important points, though, are first, the program still switches to Fast mode as it loads, and I still don't know why Word Writer 128 doesn't. SPPF

now supports the 1581 Disk Drive and the program is unprotected so you can copy it to your 1541, 1571, or 1581 (more on that later). And, Hallelujah!, it supports the expansion module! New HELP windows have been added, and the pull down windows automatically drop when you select them. All of these things add up to more speed and convenience and are worth our attention. Let's take the improvements one at a time.

The HELP windows drop automatically as you select them, but the new Help Windows are perhaps more exiting. Your "Chart of Accounts," or expense/income categories with their index numbers, are there for the asking (just push the Help key). You

formerly had to print them and then refer to a piece of paper, as you entered data. There is also a HELP window for your Account ID. If you are keeping up with several checking accounts, for example, with the touch of the Help key you can bring up a list of them with their assigned number. These are handy features, but the best is yet to come.

One of the things I suggested in the previous review was a faster way to enter the data that doesn't change, or that increments. For example, in the old version you had to enter the Account ID for each check, even if you only had one account. Now SPPF will repeat what you used on the last operation when you push F2. This also applies to the "Ref #" or check number but it increases by one each time so that if you are entering checks in order, all you have to do is hit F2 and return. If you hit F2 in the date window, it repeats the last date you entered. You will be surprised how much these simple little improvements speed things up.

I was disappointed that they didn't give us a quicker way of moving about in the Add or Reconciliation windows. You check off your checks in chronological order when reconciling your account. The window comes up at the last one entered, so you have to slowly, one check at a time, go back to the first check to start. A "Page-up" key or a GOTO TOP command would be very handy!

Perhaps the best improvement is Timeworks' use of the expansion module. If SPPF detects the presence of an expansion module it presents you with a window that asks you which modules (Transaction, Budget,

Assets/Liability, Income and Balance Sheet or Financial Planner) you want copied to the expansion module. Your answer is written to the program disk, as is the printer configuration, so you must leave the write-protect tab off the first time you use it. It takes a while to copy the programs to the expansion module, but it is worth it, because with it you can move from one module to the other, as fast as you can change your data disk. Before the expansion module, you had to load in a separate program for each of the modules.

Timeworks has removed the copy protection and expects and recommends that you make back-ups. They put this program, like all their others, on single-sided disks for those people who haven't upgraded their 1541 drives to 1571 drives. This means that about half way through copying to the expansion module, you must turn the program disk over. If you are going to make a back-up anyway, why not make it double-sided so you won't have to stop and turn it over. If you agree, do it this way: 1. Format a new disk double sided. 2. Next, use the "Autoboot Maker" on your "1571 Test/Demo" disk that you received with your disk drive. For the program name use "SP1.START" and it is a BASIC program. 3. Use Uni-Copy from the same Test/Demo disk and file copy the front side of SPPF to the new disk. 4. Without turning the new disk over, file copy the second side of SPPF to the new disk. Don't try to copy "SP1.START" and the version number file (mine is named "VC 7-2.1") from the second side as they are duplica-

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ATARI

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alone on a good work surface, keys down. Remove the metal back plate carefully keeping those tiny phillips screws. Once the back is loose, be even more careful not to let any key springs get lost. They will stay put without popping, one in each key, if you don't dump the whole keyboard. Maybe you'd better put your cat in another room.

You will be looking at a plastic sandwich of two conductive-trace layers and a punched plastic insulator between them. The idea is that the key spring presses down on the top layer and squeezes the top conductor through the hole onto the lower layer, making the connection. After a few jillion keypresses, the top layer stretches and touches the lower all the time, or at least when you don't want it to. Many times, simply pulling the layers apart, gently cleaning them, and reassembling the unit will result in complete recovery, as the sheets will be sitting in a slightly new orientation. More severe cases may require some shimming (use ordinary tape, cut into thin strips) to thicken the "swiss cheese" insulator around the problem keys.

Problem: One or a group of keys (including the "console" keys, START, SELECT, and OPTION) no longer work. This can be simply too much junk in between the layers of the plastic, and fixed by cleaning. It is more likely (especially if a group of keys are affected) either a break in the conductive traces or a bad connection at the ribbon. It's worth the effort to try to clean it first, using the procedures above.

Newer keyboards have the conductor printed on the plastic. These can develop broken traces where a piece of

the conductor either wears of is flaked off, losing the connection. The break may be hard to find, but careful inspection and/or testing with an ohmmeter for conductivity in the problem area will show where the circuit is interrupted. The area of the actual contact between the sheets can also be worn too badly to conduct. Either way, repair it with Conductive Paint. This can be found at Radio Shack or other electronic parts stores, or use Rear Window Defroster Repair, from auto-supply houses. Using a toothpick as a brush, bridge the problem area with Fresh and Stirred conductive paint, and allow to dry. Test it again before you reassemble, and be careful not to create new traces where there were none before!

The ribbon end is very fragile. Some older units have a thickish metal trace glued onto a small plastic tab that pushes into the connector, and these almost always fall apart upon disconnection. They also are usually the original problem. To fix one, remove the tab and clean the new hanging "fingers" of the ribbon. They bend easily!!! so watch it. When you have them looking good, spray out any junk in the connector, and try this trick to reinsert the ribbon: fold the ends of conductors individually back up against the ribbon, facing the side that will best contact the connector on the motherboard. Gently press the ribbon back into the connector, trying to see that the fingers on the ribbon stay straight and don't touch each other. You can jockey them a bit with a toothpick after the ribbon is connected. Beware, you may only get to do this a couple times before you lose a conductor. If you do, you can try to bare the ribbon back away, but more likely, you are finished with that keyboard.

More Atari
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TEXAS INSTRUMENT

Geneve 9640 continued from page 212

ware available or special interest markets can be created. This is no surprise to MYARC, which realizes it must carry the burden of software development for the time being. Their arranging for the P-system was a step to open additional sources of software, they have plans for a C compiler which will bring more, and they are contracting under their own label for some of the major software items that wider sales will require. In the future are multi-tasking, windows, a GEM-like operating system, and a lot of applications software, according to MYARC.

Another challenge is to provide a replacement for TI's aging eight-bit bus expansion boxes, and at least two small companies have demonstrated prototypes and announced plans for production. Miller Communications of Seattle has announced their 220 Watt expansion box available from the Queen Anne Computer Shop, and RYTE Data of Canada is working on a box with various power options. Probably the long-range answer will be the production by MYARC of a stand alone computer that does not require the separate expansion box, but their initial target has been 99/4A owners with their own boxes.

In summary, the MYARC Geneve

9640 is a well-designed modern home computer with solid links to the past. It is an excellent buy for the present 99/4A owner, who can continue to use present software and peripherals, while gradually upgrading the system and the software. Right now it offers little more than promises to anyone else, although that should change in time. The key concern at this point is not whether it can outperform an Amiga or Atari ST or IBM PC AT or Macintosh in benchmark tests. It is whether it can provide the software that potential buyers need. Its capabilities for multi-tasking and fast, high quality graphics give it the potential to broaden its appeal and perhaps find specialized markets as well. Without the resources of a large company, MYARC is limited in how much development it can bring about and how fast it can produce needed software. On the other hand, with its relatively low overhead, it does not have to sell hundreds of thousands of units to justify its existence or stay in business. The months to come will determine how effectively the 9640 will stop attrition from the TI world, and how the appeal can be broadened to capture a wider audience.

More Texas Instruments
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an opcode is acted on) down to 32 cycles, and has optimized other parts of the code as well. This increase will likely not bring it up to "full 8-bit speed" in many programs, but it will be close in many.

The biggest difference of all will be that the new ST-Transformer will offer the option at runtime to choose Atari 8-bit emulation, Apple II emulation, or Commodore 64 emulation! The "original emulation demo" program that Darek circulated almost two years ago included some Apple emulation, but this time it should be quite complete.

So then, jokingly, I asked Darek Mihocka about support for a 1050 drive on the ST to allow use of 8-bit Commercial software... and he tells me about some developmental support from 8-bit programmer Alan Reeve (author of Reevekey, News Station, other 8-bit titles) of Chicago. Alan has

contributed a program that will allow Atari 8-bit disks—even boot disks—to be read directly into an ST for use in the emulator when used with a 5.25" drive such as those for PC:DITTO. Yike! Can running protected software be too far off? The ST continues its reputation as the computer that can be anything. The list of emulation now includes Atari 8, Commodore 64, Apple II, Macintosh, CP/M, IBM, UNIX, um... and more, I think. Oh! yea, it can run ST software too.

That's not really very funny, considering that some software companies are giving the ST line the same treatment that they gave the 8-bit line... namely no treatment, no software. Letter writing campaigns have turned some companies into believers, though, and Anthony Robinson of Lansing, Michigan, is trying to get another effort mounted. He has contacted three particular companies who produce software he'd like to see for his ST. "Each has said either that they didn't know when they were going to produce

ST conversions or that they weren't going to do one," says Anthony in a letter being circulated to user groups. He encourages you to write to the following companies about the listed titles, along with any others you would like to add:

Sierra On-Line, PO Box 485, Coarsegold, CA 94039 (3-D Helicopter Simulator, THEXDER)

MicroIllusions, 17408 Chatsworth Street, Granada Hills, CA 91344 (Fire Power, Turbo, Galactic Invasions, Land of Legends, Faery Tale Adventures).

Electronic Arts, 2755 Campus Drive, San Mateo, CA 94403 (Chuck Yeager's Flight Simulator, Ferrari Formula One).

Mr. Robinson also encourages any clubs that wish to get more involved to contact him at PO Box 18093, Lansing, MI 48901. Organized appeals have worked repeatedly for Atari users, so please help.

The E. Arthur Brown Company offered, or at least advertised, a box that would do what many of us have hoped for... a way to use all three ST resolutions on either the Atari monochrome monitor or the color monitor. Additionally, it would give you a composite output at any resolution for use on other-brand monitors! Well, it was too good to be true. Yet, they say. John Bylander, the inventor of the unit, gave Brown the go-ahead for advertising it last year, after successfully demonstrating the unit. But, it burned out after a few days of testing, and no solution has been found. Brown has published an apology and written to all those inquiring about or ordering the unit, refunding any money received. They still hope to get it into production "soon" in some combination of useful features, but nothing certain at all.

Optimised Systems Software, most famous for designing 8-bit Atari BASIC, then BASIC XL, BASIC XE, DOS, DOS XL, Action, and more... is now selling their Atari line through ICD Inc., makers of many fine 8-bit and now ST products and software. ICD will now distribute OSS's Personal Pascal

for the Atari ST. Contact OSS/ICD at 815-968-2228, or call their 24 hour BBS at 815-968-2229.

DTACK Grounded, a company that used an unusual distribution method for its first and only product, DBASIC, has folded. DTACK gave out free copies of the BASIC itself, along with a few copies of the manual to user groups for review. The idea was that once you got the BASIC for free, you would be happy to buy the big manual from DTACK...well, it didn't work. One account says that DTACK sold only 60 copies of the manual before calling it quits. No additional support or updates will be released, although many reviewers were impressed with many aspects of the BASIC. You might still pick up a copy from your user group.

Parker Brothers are a bit peeved at the plethora of "Monopoly" games floating around as public domain versions of their profitable copyrighted property. Although there is almost no way to stop them from being written and distributed, the Parkers remind us all that this is copyright infringement.

The public domain has some remarkable variety and depth of programs for the ST and other computers. Many are of full professional quality, and many of these "free" programs are being distributed with a request that the user send some donation in proportion to their satisfaction to the author. Usually \$5 or so is suggested. This is the only reward most of the current flock will ever see, and they are reporting that very little in donations is coming in. It seems that Atari users just aren't used to paying anything for programs. Piracy virtually drove the commercial software market into a hole, and now the same attitude of something for nothing is encouraging our "PD" authors to produce nothing for nothing. Think about it... how many times (if ever) have you sent a buck away in appreciation of a shareware program? I'm no better, but I'm working on it. Maybe you could suggest to your local user group that they send something to a couple of the authors. After all, they wrote the programs that the club sells in the club disk library.



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harm. Well the best way to describe this new form of worm is the "MacBlipvert." And while it seems more or less benign in its current form, it is most certainly a twist on the so-called "Trojan Horse" or "Computer Virus" motif. Without your knowledge, your system file is being tampered with, and your machine is being wrested from your control.

The INIT is easily removed, but as it is invisible on the desktop, you've got to clear it with RESEDIT. The INIT will propagate itself to other disks with the system file, and so any and all system folders you use must be "disinfected" with RESEDIT once any one has "tested positive" for the viral INIT.

There is an occasional temptation for folks like me to think we've seen it all in this arena. And it's never so. Sysops on both networks are scrambling now

to assure their users that downloading is safe—that no more viruses are lurking in the Mac databases waiting to fatally infect your machine.

And there's precious little point to stretching a condom over your modem.

It hurts the reputation of all of us who regularly upload material to the networks, and puts the burden on sysops of examining uploads under a gall-darned microscope before they MERge them into public access. The entire concept smacks of sophomoric stupidity, and threatens more dangerous "diseases" down the road. Though I'll have to admit, it took some savvy to code the thing.

Yes, Virginia, there is an anarchic element that is highly skilled with computers. Hopefully some of them either grow out of it, turn state's evidence, or move into prison. The others are on the loose, and we've got to band together to watch out for them.

Talk to you next time.

Atari ST Outlook continued from page 189

but what I thought was an explosive topic hardly made a dent.

In the meantime, I had requested from MIT a packet detailing as much as possible just what the Media Lab was up to. What I received via Federal Express was a series of photostats from those blurbs on back pages of the unread portions of newspapers. I learned more about Nicholas Negroponte's diet and personal hygiene than I did about the technology his team is creating. One article from the Boston Globe quoted Negroponte as saying "we intend to predict the future by inventing it;" but by the tone of the author's writing, he casually portrays Negroponte's personal ethic as the mutterings of a technofreak.

What Negroponte is really saying—though the author didn't catch it—is that the Lab has no particular goal in mind. It can't answer the question "What does it do?" or "What are you doing?"—it really only knows the answer after the act of creation has passed another crucial step, and the idea has taken on new shape.

At times, however, that shape isn't recognizable; thus, we don't often see it. Sometimes we don't look hard enough for it; at others, the people we expect to show it to us don't. But when the means for determining the size and shape of the future present themselves to us, we go after it—technology has provided us with the incentive to act. The Atari ST has certainly been an incentive, has it not? With it, we have the freedom to search for, to research, and to ponder the consequences of the technology we are creating, as well as to create some wholly new technological concept whose practical use has yet to be found, if at all.

But what is the goal? That is the question constantly asked of the people who staff the Media Lab of MIT. The people asking are the reporters, the bewildered onlookers, and of course, the sponsors—the people seeking the ultimate commercial application, an item that can carry a patent and their trademark. After all, where will the individual profile-based newtext editor place the ads? The sponsor corporations believe they are investing in the future—although several of their executives are quoted as saying MIT's concept of the future makes no practical sense to them anyway. What the sponsors are in fact purchasing is the creators' silence. Their unborn concepts are already proprietary; the fruits of their labor bear labels.

In a book on the subject of the Media Lab, by Steward Brand of the Whole Earth Review, the subject of how ideas such as parallel processing and interactive telecommunications are brought into tangible reality is explored; but the success of the Lab is compared to what Brand characterizes as the "failure" of Atari, a company that in his mind went "belly-up" because it could never escape the image of its being a game machine company.

Yet Atari—overlooking the fact that it's belly is not up—has, more than any other company, provided high technology for the general public at a

reasonable price. Perhaps fear of technology—a fear initiated and maintained by popular fiction—has resulted in a fear of Atari, which results in its being massacred, burned in effigy, in the popular print media. Atari has shared technological ideas with the people; perhaps it is the people who are reluctant to share its good ideas with Atari.

It is an issue facing the Federal Courts of the US as well as its presidential campaigns: To whom do ideas belong? After they are shared with the people, are they still the property of their originator? Or are they the property of the first corporation to stake

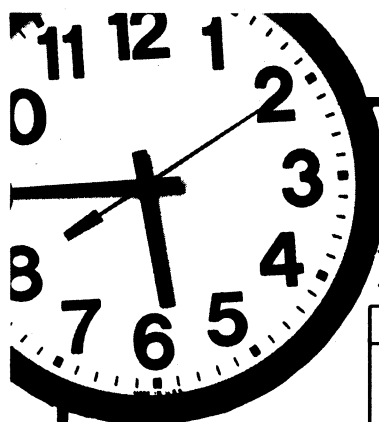
claim to them? Perhaps most importantly, what is an original idea? Quick, think of something nobody's ever thought of before.

In one Federal Court, Lotus Development Corp. is contesting with Mosaic Software, Adam Osborne's Paperback Software, and Daybreak Technologies for the rights to a specific look and feel of a spreadsheet. What a spreadsheet is, after all, is a matrical calculator; what Lotus wants is the exclusive right to put its buttons where Lotus so chooses. Can a corporation place an exclusive claim to control-C, or the F1 key? In the clamor for some fragment of the overdeveloped segment

of microcomputing to call one's own, will the corporation vanquish all competition by leaving it no free space on the keyboard? Will independent software producers be forced to seek awkward and crude methodologies for mere data input just to avoid being subpoenaed?

Should the large software corporations be granted such power, the minute details of our own computing concepts may one day become their exclusive property. We may have the ideas; but if we allow them to be purchased

continued on page 354



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Hacking The ST continued from page 190

motor down if the drive is inactive for any period of time. By turning the drive motor off, you save wear and tear on the drive motor, the heads and the disks. Of course you have to turn the motor on when you want to use the drive, and it takes a couple of seconds for the drive to get up to speed. This adds to the time it takes to record your data on the disk.

Most simple operating systems also do very little disk buffering with an eye towards maximising transfer rate. Operating systems on minicomputers and mainframes have extensive routines to buffer disk data, manage head movement and minimize disk accesses. These higher performance systems spend a fair amount of time trying to maximise disk throughput.

Most microcomputers on the other hand, use operating systems that spend little or no time on trying to maximise disk throughput. As a result, you have very poor performance on disk operations compared with the larger systems. On most systems, writing a sector's worth of data to disk means recording the actual data, then recording the sector as being used in a system allocation table somewhere on disk. This means you get to perform two disk write operations everytime you record a small piece of data.

By now you can see why recording received data at 25K characters a second can slow things down so much!

Buffering is the way to go. With buffering, you still transfer data at 25K characters a second, but you decrease the total time it takes to record the data by only paying the seek time, spin up time and head stepping times once. It turns out that the time to perform all the other operations dwarf the time it takes to transfer the data to disk.

Even with a simple system, you don't perform a disk write for each and every character. The characters you "write" to a disk actually go into a buffer. When this buffer fills up, the system performs a write. Most (DOS) C compilers use a 1K buffer for disk files.

The operating system can't even write a single byte, it can only write to disk in a chunk. The name and size of the chunk varies from system to system, but the size is almost always in the range of 512 to 2048. Early CP/M systems used 128 byte blocks. Today, most systems use 512 bytes as the basic sector size, and the smallest chunk the system can write.

Even under DOS, where you have file sizes specified in bytes, the system always allocates disk space by the cluster. A cluster is two sectors or 1024 bytes. If you append a single character to a file, DOS updates the file size, showing a file length 1 byte greater, but that doesn't mean the disk space allocated actually grew by a byte.

As an example, I made a directory on my B drive of the AT clone I'm writing on. (the ST is down right now, I've got the guts ripped out again) When

I did a DIR on it, it showed 729088 bytes free. When I wrote a small text file on it, and then did a DIR, I got 728064 bytes free and 7 bytes as the length of the text file. The missing 1014 bytes is space that was allocated to the text file, but is not being used by it. The length is simply a field maintained by the operating system.

You might wonder why the DOS discussion, well TOS is just a 68000 version of DOS, and our file structures and operations are identical.

Back to buffering. An unbuffered program performs a disk write everytime the system file buffer fills up. Usually the system file buffers are around 1024 bytes. The details of file buffer size is usually hidden from the programmer by the operating system or the compiler. Most C compilers set the file buffer sizes with a #define found in stdio.h.

We use 16K buffers, which means that where we perform 1 write (or read) operation, an unbuffered program performs 16. With the seek time, rotational latency and data transfer times, 16 disk operations start adding up to real time, time that we save with buffering. Remember that the compiler normally uses 1K buffers, but by using larger buffers, we increase the total throughput of the program. Directly controlling the buffers ourselves offers several other advantages.

A popular feature in a communications program is text capture. Text capture simply takes all the characters that show up on your screen and puts them in a disk file. This allows you to "grab" all the items of interest, and then get off the BBS and read them at your leisure.

When you are performing text capture, you want some way to tell the other computer to stop sending whenever you start to write something to disk. If the other computer keeps sending while your program is busy writing to disk, all the characters sent will be lost, leaving holes in your text.

A long time ago, two characters were designated to control the flow of information between computers. Almost anyone who has read about telecommunications will know about XON and XOFF. On the ST, it even shows up in the desk accessories.

Computers aren't the only devices to use XON and XOFF, serial printers have used these characters for years. When a serial printer is going to be busy for a while, (such as when it does a form feed) it can send an XOFF character to the computer. When the computer receives an XOFF signal, it stops sending data and waits for an XON character. When the printer is ready again, it sends the XON, and the computer starts to send data again.

These two special characters are also used in UNIX to stop and start terminal output. UNIX users know them better as control Q and control S, but they are the exact same characters. Other systems talk about DC1/DC3 protocol, you guessed it: XON/XOFF.

Most BBSs and commercial services support XON/XOFF. This gives us a convenient way to tell the other computer, "wait a second, I'm busy" and keeps us from dropping characters.

The ST uses a small buffer on the serial port, but this fills up very quickly, (in our program, we'll increase the size of this buffer, but that doesn't do away with the need for XON/XOFF) so we need to send an XOFF character whenever we're going to be busy for a while.

What this means is that when we go to write a buffer to disk, if text capture is taking place, we need to send an XOFF character before we start the disk write. As soon as the disk write is complete, we have to send the XON character to start the other computer.

This problem doesn't show up with other transfer protocols, but that is the subject of another column. As long as I have mentioned other protocols, I should explain how we arrive at the 16K size for the buffers. Xmodem is a very popular protocol on microcomputers, and since the original Xmodem programs (under CP/M) used 16K buffers, most other Xmodem programs since have tended to use 16K buffers.

You can transfer a file much quicker if both computers do their disk operations at the same time. If the programs use 2 different buffer sizes, then computer A waits for computer B to finish its disk operations and a short bit later, computer B waits for A to finish its operations. You end up waiting for A + B time. If both programs use the same buffer size, they both perform their disk operations at the same time, and you only wait A or B time which ever is longer.

As an example, if it takes A a second to read the disk and B 2 seconds to write the disk we have the following: If A and B use different buffer sizes, A reads the disk (1 second wasted) and later B writes the disk (2 seconds wasted) for a total of 3 seconds idle time. If A and B use the same buffer size, A starts reading and B starts writing at the same time. A finishes reading in 1 second, but B isn't ready until 2 seconds. After B is ready you start transferring again. This way you have only 2 seconds of idle time, not 3.

Well, enough about the reasons for buffers, let's take a look at the file buffer routines themselves. Listing 1 on page 190 is just the declaration for our file structure, and Listing 2 on page 190 shows the file buffer routines, and as you can see there isn't a lot to them.

The first field, a character pointer, acts as our insertion/extraction pointer. When the buffer is being written to, next points to the next unused byte in the buffer. If the buffer is being used for reads, next points to the next unread byte.

The second field, left, keeps track of how much unused space remains in the buffer, or to how many unread bytes are left in the buffer. The third field, hand, is the file handle. The file handle is a small integer that the operating system uses to represent the file.

The next field, mt, is a flag that indicates the buffer is empty. This is mainly used to pass an End Of File indication back to our calling routines. Next we have a flag that indicates XON/XOFF flow control should be used. The last field in our structure is

continued on page 354

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Atari ST Outlook continued from page 351

outright, then even we ourselves may not have the right to use them as we so choose. Such was the case with Software Arts, the legally-determined creator of the spreadsheet, which now rests monetarily and ideologically bankrupt because their ideas were bought.

It is the quest of the artist, the creator: to find the meeting ground whereupon the originator of the idea may retain enough claim to it that he may profit from it, and the people may retain enough rights to it to benefit from it. That is the objective: to find out how much to share without giving it all away, and in what form we can share our ideas that they may be understood.

Supercollision

Our best scientific achievements, of one form or another, have at one time originated in science fiction. It is a vise, if you will, within which ideas may be modeled, tested, modified, and most importantly communicated. Until very recently, it has been an empty vise, for very little has been done to inject the science into fiction. Our futuristic concepts—those which have been presented to us—are cluttered with weaponry, desolation, and Ferraris that turn into battle robots and back into Ferraris.

In the meantime, science is taking

off into another dimension and we hardly know it. Physicists are theorizing the potential constituents of quarks—and very few I've talked to know what a quark is yet.

Here's the situation as I see it: I live in Oklahoma, which stands a very good chance of housing the site for the world's first superconducting super collider, or SSC. What that is, is a large metal-shielded ring 52 miles in diameter, containing the only electromagnets powerful enough to accelerate protons fast enough so that when two oppositional proton paths collide, the protons actually break into constituent parts. When automobiles collide, they merely bend and come apart, but the left headlamp doesn't rematerialize into a food processor. When sub-atomic particles collide, the energy released as a result is of a completely different form, and there's no way of predicting beforehand just what form that will be. The same amount of energy is released as was contained (so states the Law of Conservation) but its type may be altogether different. Did you know anti-matter is a constituent of matter, and vice-versa?

There are certain fundamental points of science—including the basics of computing—which have manifest themselves only in the last three years. Our educational system is actually too slow to keep up with them. Show me a high school physics textbook which knows what a boson is, or a computing textbook which even projects the ex-

istence of the 16-bit microprocessor.

If we don't know what a boson is, it isn't because nobody's told us. Universities Research Association, the project coordinator for the SSC, provides for free several thousand pages of fundamental and technical physics information which makes most existing textbooks obsolete. Just write URA in Washington, DC, and they'll be more than happy to send you copies from their overstocked warehouse.

In order to want to know, to start an input channel for new information directly to the brain, somewhere in our environment there must be incentive. Threats and fear do not provide such incentive. Here in Oklahoma, there are several organized factions who aren't aware of what the SSC is: the opposition which thinks anything nuclear is a destructive force; the Legislature which says, if we don't know what force we're searching for, why are we searching for it) the editorial print media which in effect says, if the SSC doesn't benefit my life as a businessperson/homemaker/economist, who needs it? And the people who still believe a superconducting electric cable buried beneath their house will one day turn them into glowing mutants.

The common bond between these groups is a shared lack of information. All these people are influential to this project; yet none of them know what's going on. One of the interesting points to remember about freedom in America is that it implies there exists the freedom not to know, not to act. Every action thus becomes a reflexive reaction; and anything new and unusual is viewed as an unwelcome threat.

This is why our science fiction speaks so often of desolation: because the fear of desolation and destruction is the only true commercial application on the whole of our new technology. It speaks

to the widest audience, and evokes the greatest response. Our forums for creative application of new ideas thus become altars of the Apocalypse—an idea which exists, to paraphrase "Max Headroom's" subtitle, twenty minutes back in the past. It hinges on the supposition that everything that's new has been inflicted upon us by something or someone.

If there is any one group of people in human history who has had the least inflicted upon it, done to it, it is this present generation of Americans. We are left free to act; but without the incentive to act, and the discipline to know how to act, we merely have chaos. Discipline and incentive are two concepts not found in the US Constitution; therefore Judge Bork would probably throw them out of court forthwith. Yet they are integral parts of our human constitution, and should be given the honor of that recognition.

You may have noticed how, in the computer writing industry, there have been magazines in praise of computing which have been replaced with magazines which show ways to put up with computing. Incentive has been replaced with anesthesia. Hopefully, with our help, this trend is reversing itself. The want to share our ideals and our hopes, along with our methods and our logic, is greater than the want to take the common route, as Edward R. Murrow phrased it, towards "decadence, escapism, and insulation from the world in which we live." What we do in front of our ST monitor with NeoChrome or CAD-3D is no less pertinent than what happens in the labs of MIT or URA. In their labs, and in our own, technology provides the incentive. We, the writers, dreamers, and technicians, merely fine-tune the channel.

Hacking The ST continued from page 352

the buffer space itself. The buffer space is just an array of 16K bytes.

I'd like to quickly go over a couple of the more important routines, the others should be extremely easy for you to understand.

The first routine I'll cover is `cputc()`, which is used to store a character in our buffers. (a write operation) This routine is passed to the character to be stored, and a pointer to the buffer structure. The first thing it does is check to see if there is enough space left, and if not, it flushes the contents to disk. (actually performs a disk write operation via TOS)

After making sure there is room, the insertion pointer is fetched, and we store the character in the buffer space. After that we move the insertion pointer, and record the new amount of space remaining.

The routine `getfc()` is the read buffer routine. It works much the same as `cputc`, but we fill the buffer if needed (perform a disk read operation via TOS), instead of emptying it, and the character we extract is returned.

The routine `filcbf()` is the routine that

actually performs the disk read to fill our buffer space when needed. If the TOS Fread fails for any reason, we set the `mt` flag, and indicate there are no characters left. We will also announce the error to the operator. If we could read some data from disk, we set `left` to indicate the number of bytes read, and we reset the extraction pointer to the start of the buffer.

The next routine of interest, `mtbuf()`, is used to record the contents of a buffer to disk. The first thing we do is to compute the number of bytes we're going to write to disk. (sometimes the routine is called even though the buffer isn't full, such as when we exit the program and there is some captured text left in a buffer)

We then check to see if the buffer is the one used for text capture. If it is the text capture buffer we output the `XOFF` character. We then perform the actual disk write via the `Fwrite` call. After performing the disk write we send the `XON` character if we flushed the text capture buffer.

The last thing to wrap up `mtbuf` is to reset the insertion pointer, and reset the space left. Well that about does it for this month, next month things will get a little more complicated.

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Applying The Atari continued from page 208

RAM and thereby run 130XE compatible software, such as AtariWriter Plus and Typesetter. Soldering and desoldering is required for installation.

Easy Scan allows 8-bit owners with a minimum of 128K RAM and most graphics capable printers, to transform an image from the printer to the computer. Using Fiber-Optics to link the computer and the printer, Easy Scan interfaces via the cartridge port and digitally scans an image up to 75% of the area of an 8½ by 11 inch sheet. Digitized pictures are saved in standard 62 sector file format. Display color, size, clarity and graphics mode can be controlled with the included software. Also supplied are conversion utilities to convert the images to other popular formats, such as Print Shop. Easy Scan is \$79.95.

For more information on these 8-bit products, contact: Innovative Concepts, 31172 Shawn Drive, Warren, MI 48093, (313) 293-0730.

Dear Jeff:

I really enjoy your articles in *Computer Shopper*. Please keep up the good work. My thanks to *Computer Shopper* for its continuing support of the Atari.

I typed in your program "Number to English Converter" in the June 1987 issue. When I ran the program, I found it did not handle negative numbers, so I wrote this short program which can

be typed in and LISTed as "D1:TEMP." Then, load the June 1987 "Number to English Convert Program" and ENTER "D1:TEMP." You will then have a program that will handle either positive or negative numbers.

*Lt. Col. Frank P. Dunkelberg
Mentor on the Lake, Ohio*

Good idea. I didn't consider the possibility (or better, probability) that someone would enter a negative number. An 8-bit software product is on its way to you for your contribution.

Replace (or add) the following lines to the June 1987 program (or follow the LIST/ENTER procedure described above.):

```
25 REM Modified By Lt. Col. Frank Dunkelberg
60 Input #16;IN:IF IN<0 THEN GOSUB 600
80 IF X=0 THEN GOTO 90
85 PRINT "<MINUS> ";TXT$:GOTO 95
90 PRINT TXT$
95 X=0:PRINT :PRINT :GOTO 50
600 X=-1:IN=IN*X:RETURN
```

Answers To Reader Requests

In the February 1988 column, reader John Ellington requested information on the availability of a commercial or public domain Lotto program. I mentioned Soft-Byte's Lotto program in last month's column, and reader Carl Tribble has sent in some information on Soft-Byte's program and on his own Shareware lotto program:

Dear Jeff:

I just received the February issue of *Computer Shopper* and read the note

from John Ellington. Well, John is in luck—I know of only two Lotto programs for the 8-bit Atari. One from Soft-Byte called (Lotto Program) and mine.

Lotto Program (\$24.95) from Soft-Byte is more of a utility type program (see sample output in Figure 1). It is fully menu driven. Look in the February 1988 issue of *Antic*, page 76, for more information. (Contact: Soft-Byte, P.O. Box 556, Forest Park, Dayton, OH 45405, 513-278-8044).

My program was written in BASIC and then compiled to add speed. It will pick lotto numbers for you from six number files that you create (see sample output in Figure 2 on page 393). The program is set around SpartaDOS and an XL or XE computer. It will not work on the older Atari computers as is. I have also sent a new program along that I have just written that will let you know what numbers are in the number files.

continued on page 393

TRENDS AND PATTERNS CHART

TWO CONSECUTIVE APPERANCES:

THREE SHOWS IN THE LAST 6 DRAWINGS:

31
OVER THREE SHOWS IN THE LAST 6 DWGS:

NO SHOW IN THE LAST 6 DRAWINGS:

3 4 5 6 7 8 9 10 11 13 14 16 19 23 28 32 33 34 38

FOUR SHOWS IN THE LAST NINE DRAWINGS:

NO SHOW IN THE LAST NINE DRAWINGS:

4 6 7 9 11 19 23 28 32 38

NO SHOW IN THE LAST TWELVE DRAWINGS:

7 9 11 19 23 32

THIS IS THE NUMBER OF APPERANCES FOR EACH NUMBER IN 30 DRAWINGS:

1-6	2-2	3-4	4-1	5-5	6-3
7-3	8-3	9-2	10-1	11-2	12-6
13-5	14-6	15-5	16-6	17-4	18-6
19-3	20-3	21-2	22-4	23-3	24-3
25-3	26-6	27-4	28-4	29-4	30-5
31-5	32-5	33-5	34-4	35-3	36-3
37-5	38-2	39-8	40-4	41-3	42-5
43-6	44-8				

GROUPS 1-9 10-17 18-24 25-31 32-44

LAST DWG	1	0	0	3	2
2ND BACK	0	0	3	1	2
3RD BACK	0	1	1	1	3
4TH BACK	0	1	1	1	3
5TH BACK	1	1	0	1	3

2 3 5 7 13

(AVERAGE IS 6 PER GROUP)

ODD/EVEN DIGIT CHART

		EVEN	ODD
PAST 5 WINNERS	13	17	
PAST 10 WINNERS	33	27	
PAST 20 WINNERS	63	57	
PAST 30 WINNERS	90	90	

Figure 1

Crossover Dreams

continued from page 356

charts. We also have PIC for doing diagrams; CIP for manipulating diagrams on a 630 bit-mapped terminal; and Proof for previewing the typeset page exactly as it will look with all the different fonts and point sizes.

So, what it amounts to is that AT&T 6386 and the 630 MTG 1024 X 1024 resolution terminal enable you to do what is just now becoming available under MSDOS from firms such as Adobe, Aldus, and Xerox. Some of these capabilities are also possible under Xenix, VP/ix, Microport, and Merge 386

by purchasing Troff front ends from third party firms. Interleaf, for example, has a complete package for the Sun and now for the Mac II. What is fairly clear is that the price of laser printers, including those with Postscript, will plummet down over the next few years. It will be common to have Desktop Publishing "built-in" as just another utility or option by 1990, if not before.

In subsequent articles we will review Merge 386 (Locus) and VP/ix (Phoenix and Interactive) in more detail. For now, rest assured that you can have both MSDOS and Unix in a multi-user system.

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Applying The Atari continued from page 372

I have used my program on the Michigan Lottery for the past four months and I have hit four number winners four times for over a hundred dollar each time. If anyone else would like a copy of my program, please send \$5 to cover costs to me at 2813 Elwood Ave., South Bend, IN 46628.

Carl Tribble
South Bend, IN

In the January 1988 column, Cal DeGroot had asked for comments on the RAMcharger (the CPM emulator for the 8-bit Atari and Indus drive owners). In addition to Marvin Bleiberg's comments published last month, here is another user's view of the RAMcharger: Dear Jeff:

I was glad to see Cal DeGroot's question about the RAMcharger for the Indus GT disk drive. I have one installed in my GT and it is an excellent product. Besides CP/M (not really an "emulator" since the GT is based on a real Z-80 chip), the RAMcharger enhances normal Atari operations because it buffers the disk I/O, giving lightning fast responses like a RAMdisk when the same part of the disk is reaccessed.

I only have two reservations in recommending it. First is the quality of CP/M software. Do you really want to run WordStar and dBase II? No thanks, I prefer AtariWriter Plus and Synfile +. Except for relational sorts and memory intensive applications, Atari programs generally do the job easier and better than CP/M and

continued on page 394

Draw Lotto Numbers from 1 - 44
The program is setup to read
six data files from D: and put
them in D8:

I have also set the program up
for the ATARI XL and ATARI XE

If you are using an XL TYPE
-XL

If you are using a Mod. XL or
an XE TYPE
-XE

By doing this you will be set-
ting up the proper RAM DISK
for your Computer.

		CARD # 1 OF 5					15	20	30	34	41	42 = 182
16	20	26	32	34	36 = 164		14	26	32	33	34	39 = 178
1	15	22	27	29	38 = 132							
2	26	29	30	43	44 = 174							
4	5	33	35	37	39 = 153							
18	29	32	36	38	42 = 195							
									CARD # 4 OF 5			
							21	28	32	37	40	43 = 201
							4	17	28	29	39	43 = 160
							3	12	31	37	42	43 = 168
							14	24	27	37	39	41 = 182
							12	22	29	37	42	44 = 186
10	15	CARD # 2 OF 5										
10	26	32	33	39	40 = 169							
10	26	31	37	41	43 = 188							
6	9	15	28	33	43 = 134							
1	26	28	33	41	44 = 173							
8	17	25	29	42	43 = 164							

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- ☐ DIAMOND SCAN MITSUBISHI MODEL 1371A RESOLUTION 800 X 560 RUNS MDA CGA EGA \$539.⁹⁵

- ☐ Multi I/O \$79.⁹⁵

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- * Parallel port
- * Real Time Clock battery backed
- * Game port
- * Disk Drive Controller

- ☐ Mini I/O \$69.⁹⁵

- * Parallel & Serial (optional secondary)
- * Real Time Clock (battery backed)
- * Game port

- ☐ Diamond Pak \$119.⁹⁵

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Figure 2

LOTTO V1.5

(C) CARL TRIBBLE

SHAREWARE

If you feel this program is any help to you send a Donation to

Carl Tribble
2813 Elwood Ave
South Bend, IN
46628

I wrote Lotto for the Michigan 6 of 44 but it should work for any lottery that is 6 of 44.

If you have any questions or comments I can be reached on
HOUSE BBS (219)674-9288
MIKE'S HOUSE (219)282-1387
both boards are 3/12 baud 24hrs.

If you find this program useful, a Donation Can be sent to:

Carl Tribble
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The program is setup to get numbers from six datafiles A - F The files at this time are setup as follows.

A=1 to 39
B=2 to 40
C=3 to 41
D=4 to 42
E=5 to 43
F=6 to 44

If the number is not in the datafile it cannot be picked.

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Applying The Atari continued from page 393

MSDOS counterparts. I bought the RAMcharger because my church publishes a genealogy program in Apple, Commodore, IBM and CP/M formats. So for me, RAMcharger was the answer. If you have a particular CP/M program you need to run, it is well worth the \$129. I selected the Commodore 128 option from the CONFIG menu and my program ran with no problems.

The second reservation is that every dollar I put into enhancing the 8-bit Atari brings it closer to the price of an ST. (The CP/M emulator for the ST is in the public domain.) Yet I have mixed feelings since I started on the 800XL and many of my XL programs are my favorites.

But the RAMcharger is great and Future Systems' customer service is great. They have a good working relationship with Bill Roch at Elliam

Associates, a CP/M and MSDOS software distributor. Bill gives great personal attention and provides CP/M software in GT disk format. They can also convert CP/M disks you may have purchased in other disk formats. [Elliam Associates, 6101 Kentland Ave., Woodland Hills, CA 91367, (818)348-4278.] Also, if you get the RAMcharger utilities disk to move files back and forth between Atari and CP/M disks, be sure to upgrade all your working disks to the CP/M 2.2/1.1 because it took me

a long time to figure out that the utility wasn't working because I booted with 2.2/1.0 supplied with the RAMcharger and then inserted the utility disk which I didn't know I should have booted because it had 2.2/1.1.

John Kolak
Fort Polk, LA

Thanks for writing. Indus drive owners interested in the RAMcharger should also have a look at the potential compatibility problems discussed by Marvin Bleiberg in last month's column.

Next Month

That's all the space we have for this month. We'll pick a newsletter winner next month, and we'll also take a look at the "real" Daisy Dot II, from the original Daisy Dot author.

Reader's questions, comments and contributions are welcome. Address all correspondence to: Jeff Brenner, "Applying The Atari 4/88", c/o Computer Shopper, P.O. Box F, Titusville, FL 32781.

Do It Yourself continued from page 216

Although more stable than the older type ribbon, the more common all printed ones can go bad at the connection end too. A small scratch can prevent the connector from making contact with a trace, or the connector may be losing its grip. Either way, fix it by trimming a quarter inch off the ribbon to bring virgin traces into the connector, and shim the backside (non-conductive) of the ribbon with an adhesive paper label. The new contact area coupled with the tighter fit will ensure a connection.

As with the 800, if you actually break a keytop, you have to replace the entire keyboard. Fortunately it is easy, and used "parts" machines are plentiful. Feel free to mix parts from two bad keyboards, using the information above, you can't lose anything and can probably get one to work.

The XE Machines

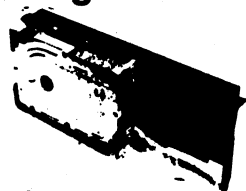
General: The weakest keyboard yet, this one goes much further in cheap production procedures. It has no springs to loose, and no sandwich. It uses a conductive pad on each key that simply touches a pair of traces on a single sheet to make the connection. Open the case just like the XL, but the keyboard is loose once the top is off. Use any and all of the film-trace and ribbon end fixes described above for the XL to effect your key repairs. Do not use any cleaner of any kind on the film, a soft damp cloth is all you should wipe with. Many cleaners would wipe the traces right off!

Problem: The START, SELECT, and OPTION (CONSOLE) keys are dead or erratic. This is the biggest problem reported on the XE series, and does not relate to any defect described earlier. Each key amounts to switch, and the type used in the XE have some internal resistance that the circuitry expects and deals with. But due to poor planning, the amount of resistance in

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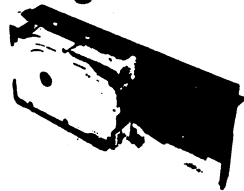
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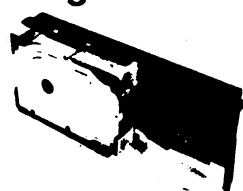
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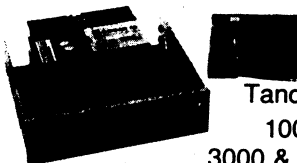
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Note And Point...8-bit Atari News And Comment

by John Nagy

First let me say sorry for the somewhat stale flavor of parts of last month's article. Parts of it were written as long ago as last October, but were postponed in printing for a multitude of reasons. In any case, on to the news, rumors, and general happenings in our world of the Atari 8-bit computer!

The More Things Change: Walt Wilson, formerly of Apple, was briefly in charge of building the Atari dealer network that has been so desperately needed for so long—and has already left the company. After discussing how Atari has been "shooting itself in the foot," he was overheard as early as September at the "Magic AtariFest" in Detroit, Michigan, saying "You don't realize how frustrating it is to work for Jack Tramiel." It apparently got too much for Mr. Wilson.

Atari Stockwatch: After more stockmarket sleighrides, Atari stock is still hanging near the \$6-\$7 mark. Splashy press at the winter Comdex show and word of the ABAQ future-computer seem to be holding up the company reputation, and therefore the stock values.

"Big Splash" advertising never made it to much of the country, despite millions supposedly spent by Atari to hawk the 8-bit and ST computer lines

this winter. According to Neil Harris, top product information man at Atari, the advertising was limited to regions where dealer penetration of the products was sufficient. That means, if Atari is hard to find in your area, they didn't advertise there. It seems to make economic sense, but as long as Atari only advertises where people already can buy the machines, the areas where they can't be found will never hear of Atari again. Let's hope Atari will do something to break the circle of "No dealer, so no advertising, so no demand, so no dealer."

Games Companies Play: The Atari 2600, the world's largest selling computer of all time, (ok, it's a computer inside, isn't it?) is about ready to be redesigned again, said Neil Harris, new technology allows the entire game machine to be integrated onto one chip. Meanwhile, thousands of counterfeit 2600s were seized off the Florida coast recently, destined for dealers who may or may not have known they were fakes. Made in Taiwan to look like the Atari units, they could seriously cut into profits for the US company. Fortunately they were discovered and action is being taken to prevent a recurrence.

Wondering where your *Analog* or *ST-Log* magazines have gone? Both exclusive Atari interest magazines have been out of circulation since the

September 1987 issues. Reports are that the company that produced the two publications has been bought by Larry Flynt (notable for his "adult" publications), and the magazines will resume, virtually unchanged, starting perhaps by the time you are reading this. Subscribers are encouraged to hang on, they will get their full contracted number of issues. Writers and contributors are also waiting to be paid. Darek Mihocka, author of the "ST Transformer" 8-bit emulator for the ST, is one of them. Part one of the article on it ran in the last *ST-LOG*, and six to nine months later, part two should see print, and eventually be paid for. Darek tells us he isn't worried.

The other word from Darek Mihocka is that a new version of his ST-Transformer will be out this spring—and it will be 50-75% faster than the "old slow" one, will include Player Missile Graphics (he expects!) and might

include an R: handler for modem use. The biggest difference will be the option at run time to choose Atari 8-bit Emulation, Apple II Emulation, or Commodore 64 Emulation!!! Darek also has been getting some developmental support from 8-bit programmer Alan Reeve of Chicago. Alan has contributed a program that will allow Atari 8-bit disks to be read directly into an ST when used with a 5.25" drive such as used for PC:DITTO. Yike! Can running protected software be too far off? The ST continues its reputation as the computer that can be anything.

Hottest news in some time: OSS and ICD tie the knot! Optimised Systems Software, famous for designing ATARI BASIC, then BASIC XL, BASIC XE, DOS, DOS XL, ACTION, and more—is now selling their Atari line through ICD Inc., makers of Spar-

continued on page 469

TI Forum

continued from page 467

ly want. They will also have a full 2 megabytes of memory because we will have the 1.5 megabyte card out by then. This card, by the way, is going to be a little different than most people will expect. It will not be unlike the Horizon RAMdisk card in that it will be configurable into a RAMdisk and whatever you configure to RAMdisk will automatically be battery-backed. And a couple of other little twists as well. So, hardware-wise, it will be a fairly complete system. Software-wise, they will have the GEME that we talked about, they will have the database and terminal emulator that they really wanted, and the professional word processor—MYPROWord—and spreadsheet will be completed. So, from just MYARC they will have about as complete a machine as they will need, to include "Norton" like utilities. We even have a Flight Simulator in the works. Though, I have never understood why folks would want one of those. But, evidently, it is important. And from 3rd party developers, we are expecting a world of software. And what we expect from them are all the peripheral things you always wanted—the games and graphics.

Incidentally, there is a full-blown CAD (computer-aided design) package already under development.

Question: Here is, admittedly, a tough question. If there was one thing that you would have changed—imagining that you were with MYARC from the very beginning—what would it be?

Riley: I would have gotten contracts signed up front. I would have insisted on software being delivered on a timed basis without exception. Every software developer would have delivered code every two weeks with full documentation on where he was at that particular time. That is the primary thing I would have changed. That is what we do now, incidentally.

I want to personally thank Mr. Riley and MYARC for making us privy to their plans for the TI users. We certainly wish them well in their efforts and will have more on the Geneve in the future.

Quickies

David Brindle sent along a copy of his terrific "Ribik's Cube" program for the TI. David says the program "provides a model through which the properties of the puzzle can be conveniently explored." It is fast and runs out of Editor/Assembler and is replete with help screens, color, saving routines, cube scrambling and unscrambling, etc. It is terrific. Unfortunately, David didn't mention cost or method of distribution. I suggest you write him (80 Cardinal Crescent, Regina, Canada S4S 4Y5) to get details. Worth whatever he is asking! New in the Forum mailbox is the newsletter from the Philadelphia Area TI User's Group (1290 Buttonwood Dr., Lansdale, PA 19446). Don Arsenault is the president and editor. A super group and a great newsletter—thanks! Thanks to the generosity of Bruce Ryan, at RYTE Data (210 Mountain Street, Haliburton, Ontario, Canada K0M 1S0; (705) 457-2774), we have some nice items to give away this month. The lucky winner this month, Danniell Evans of Anniston, Alabama, will receive a copy of Monty Schmidt's "Command DOS" software, which loads a MSDOS-like command set into memory from a Gram Kracker or "Super Cart" and opens up a new range of power for the TI user. Also, Monty's "Technical Drive," a hard-core disassembly of the DSR's, RS232, minimemory, etc. This is not for the faint at heart. This is heavy-duty, high-tech stuff. Which brings this to mind: if you care to enter our giveaways, include on your postcard what sort of system you have—disk drives? Editor/Assembler? Cassette? That will help me get the right software to the right users. Deal? See you next time. ●

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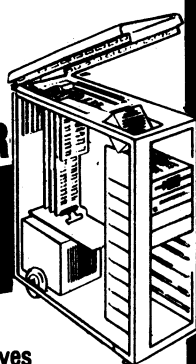
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Note & Point continued from page 468

taDOS, the US Doubler, the P:R:Con-
nection, the Multi-Input/Output Box,
and more! (They also employ Keith
Ledbetter of Express! terminal program
fame!) It's a case of the best meets the
best. ICD will now also distribute the
formerly unavailable and very powerful
MAC65 assembler and accessories as
well!

For MAC65, Action!, Writer's Tool,
BASIC XL + XE, DOS XL, and even
Personal Pascal for the Atari ST, con-
tact OSS/ICD at 815-968-2228, or call

their 24 hour BBS at 815-968-2229.

At this writing, the Express! terminal
program for the Atari SX212 1200 baud
modem is still not available. Several
flavors of AMODEM are available on
bulletin boards and from user groups
that do unleash the 1200 baud "con-
vertable" 8-bit/standard RS232 modem
for 8-bit users without any interface.
I have heard that now a kludged
handler, devised and circulated into the
public domain by the Seattle-Puget
Sound Atari Computer Enthusiasts
(SPACE) club, will actually allow Ex-
press! 8500 to be used with the SX212
using the interfaceless serial "daisy

chain." If you can find them, the SX212
is just about the best modem deal
available for any computer user, and
especially for 8-bit users who haven't
invested in an interface. Plus, since the
modem will also plug into any "nor-
mal" IBM or ST computer, you won't
lose your investment if you change com-
puters. It's well under \$100 by mail or
on dealer shelves. (Where?)

Next month, look for a report on
"Daisy Dot II," a remarkable letter
quality printing package that makes
dot-matrix printers really zing. It is two
full disk sides, and is based on Roy
Goldman's original package of last year.

Another package I am still looking
over is SignMaker, another Public Do-
main application that emulates much
of Printshop (commercial program by
Broderbund) plus even more control
and content. It allows common fonts
to be used in eight sizes on any com-
bination of lines for remarkable posters
and signs. I'll have more about it in next
month as well.

Meanwhile, Tom Hunt of Ashland,
Ohio, has been developing software for
the Upgraded (256K and up) Atari XL
and XE machines. His "The Works"
package is a page-designer featuring
"What You See Is What You Get" font
and graphic control, using the standard
Atari screen fonts (dozens available) and
Printshop converted Icons. His program
allows endlessly changing fonts and any
number of joystick placed icons on a
sheet. Although certain features are
lacking (like it would be nice to be able
to get a disk directory from within the
program), it is a very workable utility,
and will undoubtedly be used for
newsletters and projects of many kinds.
Tom tells me that he is still working
on what will be version #3 of The
Works, but most of his effort is gon-
ing into another 256K+ project—
"MTOS."

MTOS is an operating system exten-
sion written for the expanded machines
that will actually allow you to load and
run several programs at once! Multi-
tasking "slices" the time up and
distributes the computers efforts across
several jobs. The Atari was never ex-
pected to cope with that sort of thing,
and speed is even a problem when ex-
ecuting one program. But for some ap-
plications, conducting several programs
simultaneously, even though slower,
might be just the thing. The Internal
Printer Buffer is just one that comes to
mind, allowing you to continue to type
or whatever while a long document
prints. Tom has released version 1 of
MTOS and invites programmers and
interested users to communicate with
him about it via the Ballon Works BBS,
419-289-8392. (It appears at this time
that Tom plans to market the "ad-
vanced" version of MTOS to developers
for a very reasonable sum.)

These programs are available for free
distribution from the major telecom-
munication services.

A last item this month—a bizzare
report has been traveling from user-
group newsletter to newsletter. It
follows up on the cart-based 8-bit
emulator for the ST, and talks about
a cart to run ST software on an 8-bit
machine. Then it goes on to discuss how
it can run CP/M and IBM software
too—even a version for the 800 to run
XE software—and support an ST disk
drive—all for \$99. This story was sup-
posed to be humorous. The original ver-
sion I saw about a year ago went on
and on, getting more ridiculous with
each paragraph, until some sort of April
Fool punchline closed the item. Now,
without the last paragraphs, the arti-
cle is being reprinted in various newslet-
ters as though it were real—with
hopeful editor's postscripts! No, these
products do not exist. Pass the word.

And that's all the words for this
month.

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